

***Examiner's Amendments/Reasons for Allowance***

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Enter the proposed claim amendments as identified on the attached fax dated March 13, 2008.
3. Authorization for this examiner's amendment was given in a fax from attorney of record, Kermit D. Lopez, dated March 13, 2008.

***Reasons for Allowance***

4. Claims 24-31 and 33-44 are considered allowable since when reading the claims in light of the specification (MPEP § 211.01, none of the references of record alone or in combination disclose or suggest the combination of limitations specified in independent claim 1, including "adaptive synaptic element" (supported at e. g., ¶ 33), "one pre-synaptic electrode and at least one post-synaptic electrode" (supported at e. g. ¶ 37), "liquid dielectric solution comprises a mixture of said plurality of nanoconductors" (supported at e.g. ¶ 185), "applying an electric field across said connection gap, whereby said electric field induces a dipole" (supported at e. g. ¶ 37), "dielectrophoretic force" (supported at e. g. ¶ 271), "feedback" (supported at e. g. ¶ 116) and "multi-layer, feed-forward network" (supported at e. g. ¶ 183) wherein a nanotechnology

neural network is formed comprising synaptic elements, nanoconductors suspended in a liquid dielectric solution, a field applied across the synaptic elements to construct a nanoconducting region such that with an associated feedback circuit that will further comprise a multi-layer feed-forward network.

The closest prior art (USPN 6,536,106, Jackson et al.) teaches an electric field assisted assembly process to form nanometer wires across electrodes on a substrate where the nonwires are suspended in a dielectric solution. However, Jackson does not teach a feedback operation nor the continuing adaptation of the nanoconductors to the applied field.

Concerning independent claim 40, inter alia subject claim limits to the period, amplitude and frequency of the AC field across the connection gap that is associated with a feedback circuit and related feedback signal. Concerning independent claim 42, inter alia subject claim limits to a plurality of synapses, each of which is independent of voltage polarization and integrates into the electromechanical neural network one feedback signal from a feedback circuit

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Correspondence Information***

Any inquiry concerning this information or related to the subject disclosure should be directed to the Primary Examiner, Joseph P. Hirl, whose telephone number is (571) 272-3685. The Examiner can be reached on Monday – Thursday from 5:30 a.m. to 4:00 p.m.

As detailed in MPEP 502.03, communications via Internet e-mail are at the discretion of the applicant. Without a written authorization by applicant recorded in the applicant's file, the USPTO will not respond via e-mail to any Internet correspondence which contains information subject to the confidentiality requirement as set forth in 35 U.S.C. 122. A paper copy of such correspondence will be placed in the appropriate patent application. The following is an example authorization which may be used by the applicant:

Notwithstanding the lack of security with Internet Communications, I hereby authorize the USPTO to communicate with me concerning any subject matter related to the instant application by e-mail. I understand that a copy of such communications related to formal submissions will be made of record in the applications file.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, David R. Vincent can be reached at (571) 272-3080.  
Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,  
Washington, D. C. 20231;

Hand delivered to:

Receptionist,  
Customer Service Window,  
Randolph Building,

Art Unit: 2129

401 Dulany Street,

Alexandria, Virginia 22313,

(located on the first floor of the south side of the Randolph Building);

or faxed to:

(571) 273-8300 (for formal communications intended for entry.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

/Joseph P. Hirl/

Primary Examiner, Art Unit 2129

March 17, 2008